

MSc in International Business

National College of Ireland

**Technology as a source of competitive
advantage: An embedded case study**

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Abstract

The following research aims to understand theories of competitive advantage and the sources of gaining it. As well as to understand how is it that technology can help to achieve this desire sustainable advantage.

Furthermore, it aims to explore the current situation of the hotel industry in Dublin. It aims to understand what is it that the hotels are doing in order to lead in a competitive environment, moreover, it looks to explore how the usage of an external technology might help them to strengthen their strategies.

This research aims firstly, to understand theories of competitive advantage and their sources, as well as understanding technology as a form of competitive advantage. Later, it introduces 'Big data analytics' in order to understand the concept and how it works, giving examples of how it had helped some industries to achieve above average performance.

Next, the research will follow an embedded case study in order to understand the current situation in some hotels, which were selected through a convenience sampling method, aiming to explore the current strategies they are following and compare it with the literature reviewed.

The research found from the interviewed hotels, that following a low cost strategy gives a bad image, as it seems that price equals the service received, hence, do not bet for a low cost strategy, instead, some of the hotels follow a differentiator strategy, whilst the smaller hotels with local presence, try to follow a focus strategy, however, the success of their strategy seems doubtful.

Regarding the usage of big data analytics, it was found that on a business level strategy, hotels do not use this technology, however, the hotels that form part of international chains, do use the analytics on a corporate level, hence, further research is needed on a corporate level in order to understand how big data analytics is being used.

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Chapter one: Introduction

In a hyper competitive market, where consumers now have a wide variety of options and substitutes, companies are looking for a source of a sustainable competitive advantage that can make them gain a bigger market share. However, the source of this desire advantage is still a matter of debate. Porter (1985) states that firms must look the external environment of the organisation in order to decide what strategy can make the firm succeed, Porter (1985) proposed three different strategies, low cost competitor, differentiator or focusing in a specific market. However, Barney (1991) states that the source of competitive advantage comes from the internal resources a firm has, hence, focusing in the internal environment.

Despite their points of view, they both agree that technology can become a source of sustainable advantage, if this technology is used for decision making, part of a strategy, and/or is not being used by other competitors. Thus, big data analytics as the technology , can it become a source of a sustainable competitive advantage? , and if so, until what point firms would need to rely on adopting this technology in order to become the leaders in the industry.

1.2 Background of the study

In a world where competition is increasing every day, companies are looking for an advantage that can help them to gain a bigger market share and a more loyal customer. Therefore, companies have been looking to implement strategies that can provide them with a sustainable competitive advantage, be either focusing on external factors or, the internal sources of the firm. This research will be focused in a specific industry, what strategies are being followed in this industry? and can the usage of technology can help them to develop an advantage over the competitors?

1.3 Research question and objectives of the research

The aim of this study is to understand firstly, the different strategies available for the firms to get a competitive advantage. As well to understand the sources of this advantage. Furthermore it aims to understand if the usage of big data analytics can help firms to achieve a double strategy and until what level this technology can indeed be a source of competitive advantage.

The research will be broken down into sub categories in order to answer the original question. Will start from the understanding of theories of competitive advantage, source of competitive advantage and technology as a source of competitive advantage.

1.4 Purpose of the study

The purpose of this research study is to have a better understanding on competitive advantage strategies in general, as well as the sources of this advantage. Furthermore it aims to understand how the usage of an external technology can help a firm to achieve a sustainable competitive advantage.

1.5 Significance of the study

This research study is of significance as it intends to have a deeper understanding of the types of competitive advantage strategies and the different sources, whilst taking into consideration internal and external factors. Furthermore, it aims to put in context the usage of big data analytics as a source of competitive advantage.

1.6 Overview of research structure

- Chapter 1 Introduction

The first chapter of this work reviews the content of the research and the objectives.

It also explains what is the aim of the research as well as why the study of this topic might be beneficial or important to whoever is in the hotel industry.

- Chapter 2 Literature review

This chapter provides an understanding of theory of competitive advantage strategies, as well as the sources of this advantage. Furthermore, this chapter introduces the term big data analytics and provide information to understand this term, as well as some of the advantages that it has provided to some industries.

- Chapter 3 Methodology

This third chapter of the study merely explains the methodological approach, the methods and strategies to gather the data, that were used by the researcher in order to answer the research question and objectives of the research.

Moreover, it explains why the method used was the most accurate while comparing it with other methods.

- Chapter 4 Findings and discussion

The chapter four of this research is an overview of the findings gathered from the interviews made, as well as the comparison with quantitative data from the national tourism development authority of Ireland, 'Fáilte Ireland'.

- Chapter 5 Conclusion and recommendations

The final chapter of this research compares the findings with the literature review and aims to highlight the main key points of the overall research and with it, provide recommendations for further research on the topic. As well, this chapter explains the limitations encountered whilst doing this research.

Chapter 2: Literature Review

In a competitive business world, companies have been stressing out the importance of achieving a sustainable competitive advantage in order to achieve above average performance (Kalenka & Morgan 2017), however, the source of this desirable competitive advantage is still a matter of debate as some authors propose that in order to achieve competitive advantage, firms should focus in the industry structure, whereas, other authors state that firms should focus in the firm itself in order to achieve this advantage. Wen-Cheng , Chien-Hung, and Ying-Chien (2010) state that actually internal and external factors are important for firms to achieve a sustainable competitive advantage.

Furthermore, if we take the definition of strategy, it does sustain that for a firm in order to achieve competitive advantage has to exploit their skills and resources in order to take advantage of the opportunities and be able to overcome their threats (Chrisman, Hofer ,Boulton, 1988), thus, considering internal and external factors.

Technology has been one of the sources that it is believed that can help companies to achieve a sustainable competitive advantage. Different authors agree that the usage of new technologies can make firms able to differentiate from the competitors and /or reduce costs, plus helping them with decision making and having a more skilful workforce.

The current situation nowadays with the internet of things, is leading firms to focus more on a technological point of view as it is believe that can create competitive advantages to companies.

Hence, this research will focus on competitive advantage and data that has been increasing at a capacity that it is still hard to manage due to the internet era we live in, big data, and how it can help companies with their strategies in order to achieve above average performance.

Big data is all the information that people create by the simple fact of using their mobile phones, browsing on the internet, posting something on their social media, or even buying on the internet.

All the things that we do with our mobile devices and anything that we use with the internet, creates data about what we search on the internet, the amount of time we spend on social media, even our location provided by the GPS on our mobile phones, all of these data, that if analysed properly creates patterns , trends, creates behavioural understanding of the market, and a profile of consumers (Cabrera & Villarejo 2019, Hariri, Fredericks, and Bowers 2019, Timofeeva 2019, Bartosik & Ratajczak 2018, Lukosius & Hyman 2018, Grable & Lyons 2018,). All these data, once it has been analysed and filtered, then can be utilised to create competitive advantages for companies, by creating personalised range of products or service to consumers, improving customer satisfaction, a better understanding of the market, hence, facilitating decision making, marketing campaigns , reducing costs and helping manage supply chain (Hariri et al. 2019 , Timofeeva 2019 , Yordanova & Stefanova n.d).

2.1 Theoretical background

In order to understand competitive advantage as a concept, different theories have been analysed in order to get a better understanding of competitive advantage and to find the source of this advantage.

According to Chrisman et al. (1988), Hofen and Schendel's defined strategy as

'The fundamental characteristics of the match that an organisation achieves among its skills and resources and the opportunities and threats in its external environment that enables it to achieve its goals and objectives'

Taking this definition in consideration, theories of competitive advantage that took into consideration the organisation resources as well as the external environment, were used for this research. Hence, the theories

that have been analysed are Barney's resourced- based view theory (1991) and Michael Porter's generic strategic theory (1985).

Porter's (1985) theory focused on gaining competitive advantage from a positioning based view, and can be achieved by being the lowest cost competitor, by differentiation, or by focusing on a specific market (Powers & Hahn 2003, Chrisman et al. 1988). Porter based his theory on different strategies firms are able to follow depending the market environment (Bartosik & Ratajczak 2018).

Whereas, Barney's (1991) model is based on the firms resources, defined as the physical capital resources, human capital and organisational capital. Barney states that these resources in order to be able to achieve a sustainable competitive advantage must be valuable, rare, imperfectly imitable and non substitutable (Andersen & Kheam 1998).

Regardless of the focus these two theories have, they both agree that firms look for a competitive advantage that can make them profitable ,and both points of view agree that competitive advantage comes out from value perceived by the customers (Kalenka & Morgan 2017, Powers & Hahn 2003, Day & Wensley 1988) . However, according to Day & Wensley (1988) Porter's theory relies mostly from a competitors point of view focusing more on the costs and other firms, without taking much consideration in the firm itself, whereas Barney's theory explores the firm as the one responsible of delivering the competitive advantage. Hence, a research on theories covering the market and the firm will be done in order to get a better understanding of competitive advantage in the market in general, from the inside of the company, to the outside.

2.2 Generic strategies according to Michael Porter

'Competitive advantage grows fundamentally out of value a firm is able to create for its buyers that exceeds the firm's cost of creating it. Value

is what customers are willing to pay, and superior value stems from offering lower prices than competitors for equivalent benefits or providing unique benefits that more than offset a higher price' (Porter 1985)

Michael Porter (1985) proposed three different strategies that companies can follow in order to gain competitive advantage, which are cost leadership, by differentiation or by focusing on an specific market (Firoz Suleman, Rashidirad & Firoz Suleman 2019, Powers & Hahn 2003, Jones & Butler 1988) , these strategies are a response to the elements of the industry structure, which are the competitors, suppliers, buyers, substitutes and new entrants.

2.2.1 Cost leadership

According to Firoz Suleman et al. (2019) Govindarajan (1989) and Miller (1988) firms looking to implement this strategy, intend to become the low-cost producer in their industry .This strategy can be achieved by economies of scale, proprietary of technology, efficiencies of buying, preferential access to raw material, mass production, mass distribution,among others (Firoz Suleman et al. 2019, Allen & Helms 2006, Govindarajan 1989, Porter 1985).

Thus, the main aim of this strategy to gain sustainable competitive advantage is to control and reduce costs , from the manufacture, the workforce, to even considering outsourcing activities where the firm does not have a cost advantage (Firoz Suleman et al. 2019, Allen & Helms 2006 , Powers & Hahn 2003, Day & Wensley 1988 ,Jones & Butler 1988). Miller (1988) sates that firms looking to implement this strategy, will most likely compete in a more stable and predictable market , where customers seek for a standard product and that care more about the price than about the image or novelty of the product or service.

2.2.2 Differentiator

Govindarajan (1989) and Miller (1988) state that firms adopting this strategy, seek competitive advantage by being unique in the industry they are in. By being different, buyers will value the service or product more, hence, will be willing to pay a premium price for the product or service, furthermore, different authors add that customers become brand loyal, thus, less price sensitive (Firoz Suleman et al. 2019, Wen-Cheng et al. 2010, Allen & Helms 2006, Day & Wensley 1988 Jones & Butler 1988,).

Michael Porter (1985) states that in order to achieve this competitive advantage, companies need to include one or many attributes the consumer find important and essential in a product or service (Govindarajan 1989) , and it can be found in different parts of the service or product, which it could be the product or service itself, the service they provide pre and post buy, delivery system, quality of the product or service, the marketing approach, etc (Firoz Suleman et al. 2019, Allen & Helms 2006 ,Govindarajan 1989, Day & Wensley 1988 , Miller 1988).

Miller (1988) states that companies that would like to achieve this strategy positively, should focus on a more dynamic market where innovation is accepted and expected.

2.2.3 Focus

By choosing this type of competitive advantage, the firm focus on a specific market, product range, geographical area, or service line, instead of the market as a whole (Allen & Helms 2006, Miller 1988). By segmenting the market a firm seeks to have a competitive advantage over that piece of market, even though that means it might not have a competitive advantage overall. Firms can either focus and be cost competitive or adapt a differentiation strategy on a focused market (Firoz Suleman et al. 2019, Wen- Cheng et al. 2010, Porter 1985).

According to Firoz Suleman et al. (2019) , Wen- Cheng et al. (2010) and Allen & Helms (2006) for a company to seek to adopt this strategy

needs to consider , a) an adequately large niche market with potential growth must be found in order to be profitable b) Large competitors are unable to satisfy the needs and wants for the niche market as it becomes either costly or challenging.

Miller (1988) states that companies seeking this strategy need to find an homogeneous market in order to maximise returns.

Michael Porter (1985) states that in order for a company to gain competitive advantage, they need to choose one of the strategies he proposed, otherwise the firms will be stuck in the middle, thus, being a low profitable firm (Powers & Hahn 2003) , however, some authors do not share this idea as they believe that a strategy focused on a low cost and differentiator is possible (Allen & Helms 2006, Powers & Hahn 2003, Chrisman et al. 1988, Jones & Butler 1988 ,Miller 1988), despite Michael Porter feeling that those strategies were mutually exclusive. The rationale of Porter's view according to Govindarajan (1989) and Chrisman et al. (1988) is that by seeking for a low cost strategy it is required standardisation to reduce costs, whereas differentiator elevates the costs, hence, making firms to decide one or the other .

2.3 Barney's resourced- based view theory

Competitive advantage according to Barney (1991):

'A firm is said to have a competitive advantage when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitor. A firm is said to have a sustained competitive advantage when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitor and when these other firms are unable to duplicate the benefits of this strategy'

Hence, a competitive advantage in order to be sustainable depends on whether if it can be duplicated or not.

Barney (1991) states that firms looking to achieve a sustainable competitive advantage must focus on their own resources in order to have a clearer understanding on whether the situation of the firm meets the necessary conditions to become a sustainable competitive advantage (Dubey, Gunasekaran, Childe, Blome and Papadopoulos 2019, Peteraf 1993). These resources are physical capital resources, human capital and the organisational capital, however, these resources that he mentioned, in order to become a source of sustainable competitive advantage, have to be valuable, rare, imperfectly imitable and non substitutable (Wen-Cheng et al. 2010, Andersen & Kheam 1998). However, Andersen & Kheam (1988) categorise the human capital as intangible resources and skills, still, despite the categorisation, the human capital is taken in consideration as a firm resource. Furthermore, for a firm to be able to gain competitive advantage, must compete in a heterogeneous and immobile industry (Barney 1991). The rationale of this according to Barney (1991) is that if a firm competes in a homogenous and perfectly mobile environment, then all the firms have the exact same resources, then any strategy done by any firm can be easily imitated and implemented as all the other firms possess the exact same resources, thus, no source of sustainable competitive advantage can be found in an environment like that.

Different from Porter's point of view, which is more positional based, Barney's theory (1991) focus more on the resources firms have internally, rather than the industry or market the firm competes in. Hence, even though both of them look to the sources for gaining competitive advantage, they cannot be compared as the focus is different, however, they can be a complement for each other.

Nevertheless, despite the different focus, Bartosik and Ratajczak (2018) and Peteraf (1993) agree that Barney does share the idea with Porter, that a competitive advantage that works in one industry, it might not necessarily work in other.

2.4 Resource based view and generic strategies for competitive advantage

According to Barney (1991) firms are able to gain a sustainable competitive advantage by *'implementing strategies that exploit their internal strengths, through responding to environmental opportunities, while neutralising external threats and avoiding internal weaknesses'* ,hence, he does acknowledge the fact that the external environment does influence firms ability to obtain a sustainable competitive advantage, however, through his resource based view perspective, he focus on the firm resources in order to obtain this advantage. The focus of the resource based is mostly on the strengths and weaknesses of the firm. Dubey et al. (2019) agree on this as they state that the resource based view lack of context.

On the other hand, Porter's view of competitive advantage is based fundamentally on the value a firm is able to produce for its market, however, he based his strategies on the five forces of the market (previously mentioned), that means, he just focus on the external environment. The focus is on the opportunities and threats, however strengths and weaknesses are not considered.

Taking in consideration the definition of strategy previously mentioned, for a firm in order to achieve its goals and objectives, and furthermore, a competitive advantage, must consider firm resources, (Barney 1991) as well as the external environment , which are the five forces stated by Porter (Wen-Cheng et al. 2010). Hence, these two theories are a complement of each other if the desire outcome is a whole picture of the environment, where strengths, weaknesses, opportunities and threats are all considered in order to implement a strategy that can lead firms to obtain a sustainable competitive advantage.

2.5 Technology as a competitive advantage

Michael Porter stated (1985) that technology is in every industry, every company, in every value activity within a firm, hence, any changes in

technology, most likely affect competition as it can directly affect any activity. On the other hand, Barney (1991) states that physical technology in form of machine tools or information management system, is by itself imitable, hence, not a source of sustainable competitive advantage, however, if the use of the physical technology together with imperfectly imitable resources (social complexity, culture, traditions, etc) it can indeed become a source for gaining sustainable competitive advantage. Of course, these imperfectly imitable resources have to be rare, valuable and without substitutes.

Hence, technology, according to the two theories reviewed, it is first of all in present within and outside the companies, thus, important to consider it whilst thinking of gaining a competitive advantage, furthermore, Peteraf (1993) states that the resource based perspective help companies to decide whether they should either develop a new type of technology or license it, which can be comparable to the low cost strategy Porter suggest.

According to Mata , Fuerst and Barney (1995), technology just by the fact of having access to the capital to adopt technological investments is not a source of competitive advantage, nor the proprietary of the technology, as it can be imitated. However, Dubey et al. (2019) and Mata et al. (1995) state that managerial skills, can become a source of competitive advantage as it covers the necessary requirements proposed by Barney, equally, it can apply as well to the strategies proposed by Porter. Managerial skill related to IT, refers to the ability to exploit IT applications in order to support and enhance other business functions. Furthermore, Mata et al. (1995) point of view agree with Barney (1991) as he states that processing systems by itself are not a source of competitive advantage, however, if this processing system is embedded in a firm's informal and formal management decision making process, then it can become a source of competitive advantage.

Hence, this research will focus big data analytics as a source of competitive advantage, as it is the part of big data related to decisions, thus, extraction nor storage will be added in this research.

2.6 Applying the theory to Big data analytics

2.6.1 Overview of Big data and big data analytics

According to Lane (2001) big data can be characterised by '3 V's', which are volume that refers to the amount of data that is created at the same time by different users. Bartosik and Ratajczak (2018) state that there will be 20.8 billion connected devices worldwide by 2020 . Furthermore, the other characteristic is velocity which understood as the rate at which the data is created, formatted and accumulated, which happens rapidly. Ui Ahsaan & Mourya (2019) found out that *Google* receive more than 4 million queries every minute, 277,000 tweets are generated every minute and over 2 million new pictures are posted on *Instagram* every minute. And the last 'V' refers to Variety, which is the diversity of data and the sources. Data tends to be in different formats and at a different structural level. It could be either as an image, a video, audio, text, etc. Adnan & Akbar (2019) said that 95% of the all the data will be unstructured by the year 2020. However, Bartosik and Ratajczak (2018) and Grable & Lyons (2018) state that there is another 'V' that helps to define big data, which is veracity, that refers to the amount of noise that is in the data. Meaning, if the information provided by the users is indeed valuable and accurate or not.

Hence, big data analytics is the implementation of statistics, interpretation and analysis to big data and can be applied to improve business performance by discovering models and connections, identifying new opportunities (Grover, Chiang, Liang, and Zhang 2018, Paraschiv & Danubianu, n.d.).Furthermore, big data analytics can be divided in four types, which are descriptive analytics, diagnostic analytics, prescriptive and predictive analytics. By combining these

types of analysis , a better understanding of a particular situation can be obtained (Paraschiv & Danubianu, n.d.).

2.6.2 Big data analytics as a competitive advantage

According to Grover et al. (2018) and Sanders (2016) the usage of big data analytics can efficient the supply chain by reducing operational costs, this as GPS information has optimise the routes used for transportation, furthermore, the analytics of big data has helped with fuel optimisation , preventive maintenance and vehicle routing , hence, lowering the costs of transportation.

The usage of big data analytics can help firms as well by charging lower prices than competitors, Sanders (2016) , Erevelles, Fukawa and Swayne, (2015) and Fan, Lau and Zhao (2015) agree that big data allows companies to have a dynamic pricing strategy based on real time data, hence, based on consumer demand, prices may either rise or decrease, and as a consequence, increase revenue. While being able to do this, companies can strive for a cost leadership strategy by keeping prices lower than the ones of their competitors.

Furthermore, with the use of big data, hidden patterns or trends can be found from data gathered from the market. And by understanding the market, companies may use that advantage to create new products with the patterns or trends found (Saidali et al. 2019, Grover et al. 2018, Sanders 2016 ,Erevelles et al. 2015). On the service part, big data helps to get consumer insights as it is possible to understand unmet needs, hence, a quicker response is possible (Saidali et al. 2019, Grover et al. 2018, Erevelles et al. 2015).

With big data, companies now have access to geospatial data, meaning that it is possible to know consumer's mobility (Erevelles et al. 2015, Fan et al. 2015). With past location data it is possible to predict where and when a person will be at any given day and time in the future (Erevelles et al. 2015, Fan et al. 2015) ,by knowing this, companies can use personalised marketing depending on the area the target market is

or will be. As well, by analysing the geospatial data of the market, it is possible to know where your target market spend their time or the places they frequent,thus, it is possible to have a better distribution channel , making the product or service available in key places.

Moreover, the usage of big data analytics allows to understand the market, thus, companies are able to segment the market in even smaller pieces, as Sanders (2016) refers, micro segmentation. Hence, by using big data analytics and by getting to know the market, companies are able to identify a niche market (Grover et al. 2018) . By understanding consumer behaviour, enable companies as well to personalise products or services to the target market, as with the correct usage of big data analytics, companies are able to identify effective ways of reaching the right costumers with the right products (Saidali et al. 2019, Vollrath & Lloyd 2019, Grover et al. 2018,Sanders 2016) .

From a resource based view, big data analytics itself are a source of competitive advantage as , according to Grover et al.(2018) it is valuable, as it can provide novel and valuable insights to exploit new business opportunities, it is rare - depending on the industry- as not many firms have acquired big data analytics in their strategies, it is inimitable as firms are able to develop their own algorithm and methods, furthermore, the decision making process due to big data analytics is it inimitable as well, and it is non substitutable due to the amount of data that is needed to actually get some valuable data out of it.

Furthermore, the usage of big data analytics can help companies to achieve competitive advantage by human resources (Grover et al. 2018, Wen-Cheng et al. 2011) . Dubey et al. (2019) state that implementation of a big data culture requires different set of data skills, thus, the high skilled workforce (technical skills) of a company can become a source of competitive advantage, and together with managerial skills as stated by Mata et al. (1995), can provide a

sustainable competitive advantage. Furthermore, Dubey et al. (2019) state that in a data driven culture, in order for it to be successful, a culture of collaboration, knowledge exchange and big data and analytics must be promoted, thus, organisational culture can promote data driven decision making capabilities.

2.7 Conclusion

We can conclude that both of the theories proposed have a focus on achieving a sustainable competitive advantage in order to get above average profits, however, the focus they both have is different. Porter's theory is focused on the market and its forces, whereas Barney's theory is focused on the firm's resources. It is believed however that instead of one being better than the other, each of them is a complement for the other (Kalenka & Morgan 2017, Peteraf 1993) .

Furthermore, the generic strategies proposed by Porter are focused just in the costs of a company and the success of a firm is measured by the market share (Jones & Butler 1988) . It is believed however that a resource based view is needed as well ,instead of just focusing on costs and as the measurement, market share (Kalenka & Morgan 2017) . This will enable a full picture of the market and the firm itself.

Porter and Barney they both agree that in order to generate a competitive advantage -despite of the focus of origin they have - firms must create value through their offering, which has to be perceived by the market, in order for the market to offer money in exchange of those offerings (Kalenka & Morgan 2017). However , Kalenka & Morgan (2017) differ as these different points of view implicitly value the market as if customers were alike, hence, this raise the question of, what does the market perceive as valuable, and as it varies from industry to industry, hence, how can a company strive to adopt any of these strategies if the value perceived by the market is not known.

Instead of focusing the different strategies in different stages of the product cycle, it is believed that big data analytics can help firms to understand what is it that the market find valuable depending on the product or service, thus, to implement a more effective strategy that may focus in any of the generic strategies, despite of the breadth and dynamism of the market. It is believed that the usage of big data analytics can help companies to reduce costs, as well as bringing the company factors for differentiation. On the other hand, the usage of big data can help as well with internal issues the firm might be dealing with, or/ and can help with a better inside organisation and facilitate decision making.

Antonio et al. (2019) confirmed through a study in the hotel industry that using big data analytics can help to predict the likelihood of booking's cancellations, thus, making forecast decision making -one of the main task of the revenue management- easier and more accurate.

Timofeeva (2019) noted the advantages big data analytics brings in the retail industry benefiting the retailers and their customers. Some of the benefits found were improved shopping experience, dynamic consumer service, effective personalisation, among others.

In the healthcare industry, Mehta and Pandit (2018) state that the usage of big data can help the industry by early identification of high risk patients, personalised medicine, optimisation of clinical operations and cost effectiveness of care.

Belhadi, Zkik , Cherrafi , Yusof and El-Fezazi (2019) studied the advantages big data analytics bring to the manufacturing industry, and found out that it helps to improve performance, support decision making, enhance knowledge and transparency.

Grover et al. (2018) state that the financial industry has been one of the industries to take the most advantages of big data analytics. It has helped the industry to manage risk and fraud, besides the optimisation of product development, marketing and customer communications.

Despite the advantages that big data analytics can bring to the firms in different industries, Cabrera and Villarejo stated (2019), the adoption, implementation and management of the big data analytics carries extra costs to the company. Costs from the new technology to the data scientists, which are the ones with the knowledge and tools to give all this data some value (Ui Ahsaan & Mourya 2019), thus, avoiding the adoption of big data in the firms. As well, according to Bean (2017), the adoption of a data-driven culture, takes time and investment in technology. Factors that not all the companies are either willing to take the risk, or willing to make the investment as 'Big data' and all the implications it takes, it is still an unfamiliar topic for them.

Hence, it raises the question regarding the usage of big data analytics in companies, despite the research done and the advantages that it carries to adopt a big data culture in order to achieve a competitive advantage, if companies are implementing this technology in their strategies and if so, what are the advantages that the firm have noticed, and on the opposite scenario, what is it that stops them from using big data analytics. As Barney and Porter states, every industry is different, hence, the research will be focused in one specific industry in order to see if big data analytics have been used to improve performance.

Thus, this research aims to understand if the usage of an external technology, in this case, big data analytics, can help firms to achieve a double strategy and until what point this technology can be a source of a sustainable competitive advantage.

Chapter 3: Research Methodology

This research aims to explore the current strategies that are being followed by hotels and the source of their competitive advantage. This with the intention to understand if a double strategy, from the ones proposed by Porter, is able to be followed without being stuck in the middle. Furthermore, explore if big data analytics is being used to enhance strategies and can help to achieve this double strategy.

Moreover, this chapter will explain how this question and objectives are to be answered. From the methodology the researcher will follow, to the methods and strategies to gather the data that will answer the question. Additionally, this chapter includes too the sampling and the method for selecting them, as well as the method decided to analyse the data.

3.1 Research philosophy

Research philosophy can be understand as :

‘ a system of beliefs and assumptions about the development of
knowledge’

(Saunders, Lewis, and Thornhill 2015)

Hence, while conducting a research, it refers to the way we gather data, how we analyse it and how we use it. Saunders et al. (2015) state that there is no ‘best’ research philosophy, instead, the orientation depends on the researcher and what the research question is aiming, thus, it is subjective and linked to individuals view and the way the world is seen from each perspective. Saunders et al. (2015) explain five major philosophies in business and management which are positivism, critical realism, interpretivism, postmodernism and pragmatism.

Interpretivism philosophy does not agree that laws are universal hence disagree with generalisation, instead, believes that the own experiences and context influence the own experience. This research believes that each hotel has their own strategies that were defined as personal

beliefs of the managers, they might end up aiming for the same, profits, but it is believed that their own context and experiences does influence in the decision making. Furthermore, the adoption of certain technologies, in this case big data analytics, it is also dependable on the strategies that are being implemented and the own beliefs of those in charge. Hence, an interpretivism philosophy will be applied whilst doing this research. Saunders et al. (2015) mention that it is believed that this philosophy is appropriate in the case of business and management research as it takes in consideration that each business is unique in their own context, agreeing with the literature reviewed, that each industry is different, hence context in this research is important.

Moreover, a positivism philosophy was considered as well but the researcher believes that it does not apply to this research, as it is believed that the own experiences are an important part for the decision making of strategies, and as this philosophy have an epistemology that relies more in quantitative data rather than qualitative, and believes that knowledge can be generalised and law based, rather than gained through personal experiences (Saunders et al. 2015), hence, this philosophy was discarded. Furthermore, positivist try to remain neutral and detached whilst doing the research and gathering the data (Saunders et al. 2015) , however, it is believed by the researcher that in order to obtain accurate and reliable data in this research, a subjective approach is needed in order to obtain in depth knowledge of each organisation in their context.

Critical realism was discarded as well, as this philosophy believes that everything happens for a reason, hence, looks to understand past events that might have affected how the organisation is today. However, even though this research does take in consideration own experiences, the researcher does not look to understand past events that might have affected hotels to follow a certain strategy, instead, this research aims to

understand the current situation of the hotels, no matter what their strategies were in the past.

3.2 Research Design

According to Saunders et al. (2015), the research design can be explained as how the researcher will answer the research question, as well as the methods to collect and analyse data.

Due to the focus of this research, it was decided that the best approach to gather data in order to have a better understanding of the strategies and decisions made in the hotel industry was through qualitative research, this by conducting interviews to the management team of the hotels, however, quantitative analysis of officially published data is intended to be used after the findings of qualitative data are done, in order to compare the strategies with the current tourism situation in Dublin.

Thus, this research is primarily based on an inductive approach with qualitative research, as the research question is more subjective rather than objective, thus, data should be based on the own experiences of the hotels and their strategies, so data cannot be measured numerically in graphs or statistics, instead, interviews need to be done, however, as stated before, the researcher intends as well to use quantitative secondary data through market research reports done by '*Failte Ireland*' in order to understand the overall situation of the tourism in Dublin, and with such information, compare it with the strategies the interviewed hotels are currently using, this in order to triangulate the findings and strengthen the research (Farquhar, 2012), hence, this research will use a concurrent triangulation design (Saunders et al. 2015).

The reason why mixed methods were chosen is to, as stated before, strengthen the findings, as it was believed that the usage of only qualitative data would have lacked the whole scenario of tourism in

Dublin. And the decision for the inductive approach is, previously mentioned, that the context is key in the strategies being taken, hence observation is needed. In contrast with the deductive approach which gives for granted a theory and then test it, in this research, data in the context that the phenomenon is occurring is gathered first and then, findings are compared to the theory to see if it applies or not.

Furthermore, this research will be cross sectional as the hotels that are being interviewed and explored, are being done at the same time instead of a determined length of time.

3.3 Research strategy

This research aims to understand how a firm can avail a double competitive advantage strategy with the help of big data analytics, thus, as stated by Porter (1980) and Barney (1991) , the sources of competitive advantage varies from industry to industry, hence, this research will focus in one specific industry and intend to explore the strategies firms use within this industry. The necessity to focus in a small number of firms within the same industry, is needed, therefore, case study as a research strategy was selected.

Survey strategy through questionnaires were initially contemplated as they are done in a real life setting as well, however, surveys findings tend to represent a population as a whole, as data is gathered in a quantitative way (Saunders et al. 2015) and due to the reason the phenomenon in question has to be in a particular industry as results may differ from industry to industry, surveys were not a viable option. Surveys as well, lack of context, and in this specific research, the context is key to understand the phenomenon. Hence this strategy was discarded.

Archival and documentary research (Saunders et al. 2015) was considered as well, but due to the inaccessibility to end of the year

reports and/or strategy documents due to its confidentiality, the researcher believed that the findings were not going to be either reliable due to the lack of a proper analysis of the overall situation of the hotel nor sufficient, due the inaccessibility of documents, hence, the decision of interviews was opted due to the in depth knowledge of the situation of the hotel through the lens of the experience of the managers and with the phenomenon, in this case big data analytics, in context.

3.3.1 Case study

According to Farquhar (2013) and Saunders et al. (2015) , Yin defined a case study as:

‘An empirical inquiry that investigates a contemporary phenomenon in depth and within its real life context, especially when the boundaries between phenomenon and context are not clearly evident’

Thus, as part of the research question is about Big data analytics, it is indeed a contemporary phenomenon and the researcher aims to understand this phenomenon in a particular context, which in this case is competitive advantage in the hotel industry. As shown in the chapter 2, big data analytics can bring advantages in many ways and many industries, but the research aims to see how big data analytics interacts in a specific context.

That is why the researcher believes that the best possible way to understand this is through case study research.

Furthermore, according to Farquhar (2013) Yin states that case studies are preferred when there is little control over the events, as the phenomenon needs to be understand in context, hence, it reinforces the decision of using this type of strategy.

Moreover, Saunders et al. (2015) and Biggam (2011) state that case studies could be either single or multi cases; this research will adopt a single case with multiple units of analysis in the same context, so findings can be compared and contrasted among each other.

This research aim to understand the strategies currently being followed by the hotels, in order to understand if it is possible to achieve a double competitive advantage strategy with the usage of big data analytics, if the technology is used. Hence, this research has a exploratory and descriptive focus as it look to understand the current situation of the hotels within their context.

It is well known by the researcher that case studies researches are limited in findings, as small number of samples are analysed, however, it was known as well that according to theories studied in chapter 2, the phenomenon varies from industry to industry, thus, the researcher believes that this limitation in this type of research or any other, was expected, however, it can bring further knowledge for the industry that it is been applied, in this case, the hotel industry.

3.4 Type of interview and Sampling

The type of interviews that the researcher will adopt are semi structured synchronous electronic interviews on a one to one basis. According to Saunders et al. (2015) semi structured interviews can provide better contextual material, which for the purpose of this research, is needed. Furthermore, by conducting semi structured interviews it is possible to understand the reasons why, in this case, hotels are adopting a certain strategy and maybe as well, why not a different one. The researcher believes as well that by conducting semi structured interviews it is possible to enquire further on matters that maybe were not originally contemplated on the interview schedule, unlike structure interviews that does not give option for this. As for the choice for electronic interviews, because of the current pandemic ongoing, meeting face to face was more 'risky' and the researcher assumed the interaction was going to be less.

Due to the limitations of time - which will be addressed later on this research- convenience sampling was the method chosen for selecting

the sample. According to the theories of competitive advantage reviewed, the theories can apply to any industry and there is no distinction on the size of the company, hence, the researcher believes that even though the sample was taken from a convenience method, the sample still forms part of the population, which in this case is the hotel industry. Moreover, as a non-probability sampling, there is no selection of the sample technique, instead, generalisation of, in this case, industries, is done. Furthermore, the researcher believes that the sampling is a typical scenario of a hotel in Dublin, hence, findings will be more appropriate to the overall situation of the industry. So, the interviews will be done to 4 managers from 4 different hotels in Dublin.

3.5 Interview Schedule

The below table shows the interview schedule that was created in order to cover all the themes in the interviews.

Thematic Areas	Questions
Introduction	How long have you been in the hotel industry?
	How long have you been working in the hotel?
	Could you tell me a little bit more about the hotel you work in?
Getting to know the target market and what they value	Could you tell me about the type of guests that you host?
	Are they mostly nationals or foreigners?
	What would you say is the hotel's target market?
Type of strategy and sources of possible competitive advantage	What is it that your target market values the most?
	How does the hotel attract the target market?
	What does the hotel do in order to fulfil the target market needs?

	Would you say that your hotel is adopting a better strategy than the other hotels, to attract the target market?
	What do you consider more important, offering low rates or a good service? Why?
	How do you set your rates?
	How do you train your staff?
	What makes your hotel different from the others ?
	Do you think being 'different' helps to attract more customers?
Big data analytics	Are you familiarised with the term 'Big data analytics'?
	Does your hotel uses any form of BDA? either directly or indirectly
	Do you think it can / has it helped your hotel?
	If the hotel do not use BDA, why?
Hotel industry	What do you think of the current situation with the hotel industry in Dublin? (Pre Covid19)

Table 1: Interview Schedule

3.7 Data analysis

The way data was analysed was according the Miles and Huberman tradition (Mills, Durepos and Wiebe 2012), hence the semi structured interviews were recorded and the transcribed in order to code the interview by themes (See appendix B). According to Mills et al. (2012) this strategy relies on the usage of matrixes in order to represent the data (see table 2).

There were 8 themes found on the interviews and each of the themes were coded and assigned a letter for further analysis of the data.

Thematic coding			
A target market	B Source of comp advantage	C low cost	D Differentiation
A1 Leisure	B1 Better service	C1 Strategy used in the past	D1 Personalised service by knowing your market
A2 Corporate	B2 Staff	C2 Low rates damage the brand image	D2 Trained staff
A3 New market, Families	B3 Location	C3 Low rates equals cheap brand that cannot offer good services	D3 Location
A4 Irish	B4 Breakfast	C4 If you set low rates, the customer will know beforehand that will receive a bad service	D4 Increase rates but offer better service
A5 UK	B5 Genuine service	C5 Low rates thus bad service, if people stay, won't come back	D5 Preferential rates to returning guests
A6 USA	B6 Personalised service		D6 Free upgrades
A7 Groups	B7 Trained staff		D7 Whatever you offer, make sure people link it with your brand
A8 Young travellers (22-35 y.o)	B8 Laid-back environment		D8 Database with all the guests that have stayed
A9 Southern europe countries	B9 Reputation		D9 Casual vibe
A10 Returning guests	B10 Apps for interaction with the guest		D10 Industrial design
A11 Short stay travellers	B11 Uniqueness		

Thematic coding			
E Service	F Value	G BDA	H Hotel industry in Dublin
E1 Service is more important than rates offered	F1 Familiar environment	G1 Booking, rate intelligence	H1 Is going well
E2 Pro active staff	F2 Feel like home	G2 Expedia	H2 A lot of events help the industry
E3 Standard operation procedures	F3 Closeness to city centre	G3 Fáilte Ireland	H3 Is getting more competitive
E4 It's an experience, thus, guests have to stay to notice the quality of service	F4 Closeness to touristic places	G4 Do not own data	H4 Big brands take most of the market
E5 If you want guests to come back, deliver a good service	F5 Service	G5 Interest in implement it	H5 Industry has been growing for the last 6 years
E6 Online training	F6 Feel welcome	G6 Lack of knowledge on how to use it	H6 More people travelling to Ireland
	F7 Privacy	G7 Lack of knowledge on the advantages	H7 Low season are less months now
	F8 Freedom	G8 BDA on a corporate level, not business level	H8 Was booming
	F9 Our guests do not want a full service kind of style	G9 Data collected though the app and website	H9 Bright-looking
		G10 Data is key, the more you know about your customer, the better	H10 A lot of opportunities

Table 2: Themes and coding

3.8 Ethical Issues

At the beginning of every interview, the researcher explained the purpose of the interview and what was expected to achieve with the information gathered. Each of the interviewees was emailed a consent form (See Appendix A) to be signed if they agreed with the terms, still, the researcher made emphasis on the fact that the interviews were going to be audio recorded and eventually, transcribe for their analysis. Moreover, it is understood that the topics which were going to be spoken could be confidential of the hotel, hence, the researcher stated that if in any moment the interviewee did not feel comfortable with the questions, they could refuse to answer and to stop the interview whenever they wanted. As well, it was reminded to the interviewees that all the information was private and anonymous. Furthermore, the interviews were conducted through 'Skype' in order to keep the privacy, as the video calls are encrypted, unlike other web conferencing services. The selection of this method of interview was selected as the researcher believed interviewees would feel safer due to the ongoing pandemic situation, hence, to safeguard the researcher and the participants of the interviews, this decision was made.

3.9 Conclusion

The previous chapter has provided details regarding the methodology and methods used to gather the data necessary to keep up with the research, as well as the methods used to analyse the data collected.

It can be concluded that due to an interpretivism philosophy, where the context was needed in order to understand the current situation, thus, case study with semi structured interviews was the best approach, as it takes into consideration current factors ongoing in the industry.

The next chapter will outline the findings of the research.

Chapter 6: Findings

The following case study describe the situation of 4 hotels in the city of Dublin, regarding their current conditions in the industry. It aims to describe the current strategies being followed by the hotels, the source of what they believe is their competitive advantage and how the indirect or direct usage of an external technology has help them to set rates and forecast sales. Secondary data collected from researches of the national tourism development authority of Ireland '*Fáilte Ireland*' were used to understand the current situation with the tourism in the country and the city of Dublin.

The interviews were conducted on a semi structured basis in order to have follow up questions in themes that were not consider in the interview schedule. During the interviews the following themes arose: the target market, type of strategy, source of competitive advantage and the usage of big data analytics. Findings were as followed:

Findings

The interviews were conducted to 4 hotels of different sizes, 'hotel 1' a boutique hotel with presence only in Dublin, 'hotel 2' a 3 star hotel with presence just in Dublin as well, 'Hotel 3' a 4 star hotel that is part of a big chain, with more than 50 hotels between UK, Spain, Netherlands, Germany, Dubai and Ireland, and finally, 'hotel 4' that belongs to one of the largest hotel chains in the world, with more than 5,000 hotels all over the world and more than 25 different brands, this specific brand, 'hotel 4', have more than 50 hotels around the world.

According to the hotels interviewed, the current situation of the hotel industry in the country, specially in Dublin, is getting more and more competitive, with more hotels being built during the last year. furthermore, the increase in the demand is due to larger events happening in the city and an increase in the promotion of the country.

According to 'Fáilte Ireland' , the number of tourists coming to Dublin have been increasing every year since 2012, from about 6 millions on 2012, to more than 9 millions tourists on 2017 (Failte Ireland, 2018).

Target market

The 4 hotels are located within the city centre of Dublin, but ,despite the fact that the 4 hotels are located in the city centre, they have different target markets. It was seen that hotels that have big companies close to them, targeted corporate travellers, whereas, the ones closer to touristic places, like temple bar, they would target leisure travellers and families.

The reason why people travel to the country differ according to 'Fáilte Ireland' (2019) Figure 4.1 show the different reasons why people travel to the country.





(000's)	Total	Britain	Mainland Europe	North America	Rest of World
 Holiday	5,256	1,372	2,091	1,468	325
 Visit Friends/Relatives	2,705	1,496	724	278	207
 Business	1,248	563	468	134	83
 Other	400	50	229	83	39

Figure 1 Purpose of travel for overseas tourists to Ireland in 2018
(Fáilte Ireland ,2019)

It can be inferred that the majority of the travellers from mainland Europe, that were the largest market in Dublin during 2018, come to the country on holidays, whereas people from Great Britain mainly come to visit friends or relatives, however coming on holidays is almost as important.

The nationalities of the guests varies from the 4 hotels, some of them target domestic travellers, while other target overseas, specially North

American travellers, which according to Fáilte Ireland (2017) , this market has been growing since 2013 on an average of 12% per year. There was no linkage between the location and the nationality of the traveller. However, the ‘hotel 4’ which is a worldwide chain and well recognised brand, do focus on american travellers, one of the reasons is because of the strong loyalty program they have, which has a strong presence in the United States and Canada.

According to ‘Fáilte Ireland’ , the nationalities of the people who travelled to Dublin during 2018 are as shown in figure 4.2.

Dublin		
Market	Numbers (000's)	Revenue (Cm)
Britain	1,817	318
Mainland Europe	2,519	784
North America	1,494	662
Other Areas	479	331
All Overseas	6,309	2,095
Northern Ireland	295	99
Domestic	1,700	343

Figure 2 Dublin tourist number by nationality in 2018 (Fáilte Ireland ,2019)

It can be observed that the majority of the tourists coming to the city are mainly from mainland Europe, following travellers from Great Britain. However, the money spent per market does not correspond to the amount of travellers. Travellers from North America are the 4th biggest market but the second biggest spenders.

Regarding the age of the travellers, just the hotels that have an international presence, were the ones that were targeting young travellers.

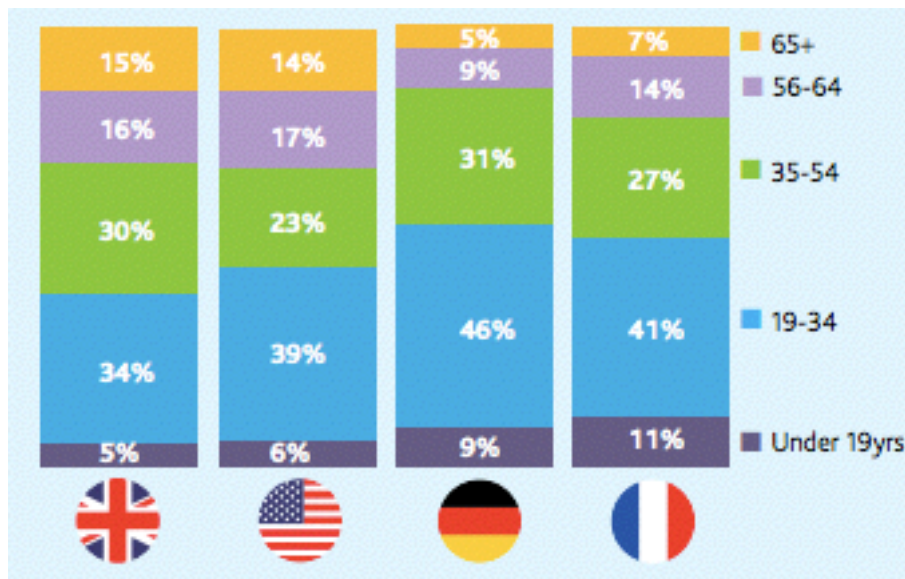


Figure 3 Demographics (Fáilte Ireland 2017)

According to 'Fáilte Ireland', one in every two travellers, are under the age of 35. Hence a relatively young market.

'Hotel 1' is currently focused on leisure and corporate travellers, mainly from the Ireland and UK. This hotel, as stated before, targets corporate and leisure travellers, however, are looking to attract a different market, which is the 'families', the reason for this is because of a report obtained from the national tourism development authority of Ireland 'Fáilte Ireland', which states that 'families' is a bigger market and more profitable than the corporate and leisure. They intend to target this new market by offering packages that might appeal them, which is by offering 2 adjoining rooms. Despite the growth on this market, we have the 'hotel 2' that focus more on the corporate traveller, mostly domestic. still, as any business they are open to any customer that might stay with them, making groups a big source of their revenue, however, groups are just 'seasonal' as they host them if there is a big event going on in the city. Regarding the 'hotel 3', their current target is families and tourists, mostly from overseas, countries like Italy, Spain, Germany and UK on a regular basis, however, they have seen a trend on young travellers, from 22 to 35 years old during summer. And 'hotel 4' targets

young travellers and business travellers that look a short stay in the city, hence, not many services,

About the American travellers, hotel 1 stated that they do host Americans but is not their target as this market demands more services than the ones they offer. hotel 2 on the other hand did not mention this market, hotel 3 said during summer they host a lot of americans, however, 'hotel 4' stated that the American market is about the 80% of the overall guests that this hotel host.

Regarding what the target market of each hotel values, the 4 hotels stated that location is one of the main reasons why a traveller would stay in their hotel. the reason varies depending the type of traveller though, a corporate values location as in close to the companies they have to go, and leisure and families, closeness to the city centre and touristic attractions. However, 'hotel 4' added that their target market also values the privacy and the freedom that they experience in the hotel, as this hotel is, as stated from them, a more laid-back hotel with a motto that is 'self service is the best service'.

Low cost strategy

Furthermore, the research found really interesting that according to the 4 hotels, low rates equals bad service, at least from the perspective of the costumer. Hotel 1 stated as well that low rates lead to

' people seeing your brand as a cheap brand who cannot offer services'

and hotel 3 stated:

' if you set low rates, the customer knows beforehand that most likely will receive a service as low as what they are paying'

Which is the reason why these hotels aim for higher rates but lower than competitors, but at the same time, providing a better service which can be expected for such rates.

The 4 hotels stated that they set their rates accordingly to the competitors, hence, none of the hotels have adopted a low cost strategy per se.

Differentiation

It was found out that the hotels 1, 2 and 3 does not really have adopted a differentiation strategy, their source of competitive advantage is the same for the 3 of them, which is the staff and their location, but other than that, none of them mentioned what makes them different. On the other hand, Hotel 4 did mention that their uniqueness and being different, had helped them to attract more customers. This hotel according to them, is different as their target market demands that. With a more casual vibe, they believe that being unique in the city, helps to attract new curious customers, besides, as the brand is well recognised all over the world, people feel that even though is different, service and quality is guaranteed. This hotel also has a mobile application that the guests can download during their stay for a more online interaction, instead of face to face, this to complement the privacy and freedom their target market values.

Moreover, another strategy done by the 4 hotels is to maintain the guests that have stayed with them, the 4 hotels stated that they rely on their returning guests and encourage them to return by offering lower rates than the ones available for the general customers. Hotel 3, promote this strategy more and offer better offers, for example, returning guests that have recommended the hotel, receive an additional discount on their rates, something that hotel 1 and 2 do not do, or at least, did not mention. Regarding hotel 4, which is the biggest of the four, they have a strong loyalty program and as they have more than 5,000 properties, their strategy works better as customers can

avail these benefits in practically anywhere in the world. Nevertheless, beside the loyalty program, the benefits for returning guests is a normal practice in the hotels, hence, not a differentiation strategy as the hotels stated.

Source of competitive advantage

As stated above, a source of competitive advantage of the hotels is their location, the 4 of them understand that and try to take advantage of it by targeting the market that might found more appealing their location. However, the main competitive advantage 3 of the 4 hotels stated that they have, is their staff. Hotel 1 stated

‘We have nice pictures on our website, but that doesn’t makes the Hotel 1, Hotel 1 is the people that works in there’

showing that their staff is the reason why people come back and stay with them. However, even though this hotel deeply depends on their staff, the training they offer to them is minimum, as the hotel count on their staff to be pro active and to learn as it goes. They do have their standard operation procedures but still, the hotel relies more on the skills their staff develop by themselves. Hotel 2 stated that :

‘ if you want the guest to come back, always give a good service’

hence , relying on their staff to deliver that desired service.Hotel 2 said their staff is always going that extra mile to provide an excellent service, something that is appreciated by their guests. No comments regarding the training their staff receive.

And hotel 3, as stated before, they rely on their returning guests, hence, the reason for them to come back is because of the service they give. Hotel 3 stated that every department of the hotel is trained in order to give that service. Training in this hotel is about all the departments of

the hotel, despite the department you work in. This in order to understand how the whole operation of the hotel works and to have a better team work, as a consequence, a better service is given as all the staff is trained to answer any query regarding any department. Furthermore, they understand how every department is interconnected, hence, strive to do a good job in order to help the other areas.

Moreover, hotel 4, even though did mention the service as something important, the uniqueness of the hotel was the main source of their competitive advantage. They understand that there is no hotel in the city with the same characteristics as theirs, hence, take advantage of that.

Big data analytics

It was found that none of the hotels uses big data analytics directly, at least not on a business level, as in, they poses the data, however, they do use it indirectly. 'Hotel 1' and 'Hotel 2' work together with online travel agencies such as *Booking* and *Expedia*. The 'Hotel 1' mentioned how '*Booking*' offers them daily reports on the rates of the competitors, so they can set their own according to the market. Furthermore, '*Booking*' offers as well predictions on sales depending on the rates they set. As well, the hotel receives at the end of every year, reports from '*Fáilte Ireland*' regarding the overall situation of the tourism in the country during the year. A diagnostic approach of big data analytics.

Regarding 'hotel 3' states that in her hotel, they do not have a team that focus on big data analytics, but she believes that on a corporate level, there might be a source of big data analytics, however, this was just a guess.

Nevertheless, these 3 hotels stated that they do not really understand how big data works nor the advantages that it can deliver to their

business, however, they would be open to implement it if those advantages were indeed generated.

About hotel 4, they stated that data collected through their application and their website is used on a corporate level, that in the hotel itself, they just get the 'results' and deal with them accordingly.

This hotel believes that the usage of big data analytics has helped them to deliver a better service, as he stated:

'These days, data is key, the more you know about your customers, the better'

Hence, it was found out that the small hotels with local operations, do not have their own source of big data and there is a lack of understanding in the term and the advantages, whereas the bigger hotels, do use their data to improve their strategies, however, is done on a corporate level and not on a business level, thus, lack of information regarding the advantages and disadvantages.

Chapter 7: Conclusion and recommendations

Conclusion

The aim of this research was to understand the current strategies being followed by the hotels in Dublin, moreover, if big data analytics was being used as a strategy, and if so, how it has helped and if big data analytics could help the companies to achieve a double generic strategy.

The research found out that hotels with just local presence do not have a clear strategy, as they do not have a specific target market, whereas, hotel chains seem to have done a previous research about the market in order to offer them what they are looking for. Furthermore, the lack of knowledge of the market, hotels have misunderstood what is it that they value, hence, 'only' delivering a good service, however, not enough to give them a sustainable competitive advantage. On the other hand, the hotel interviewed that is part of the largest hotel chain, understands their market and delivers something else besides the good service, making it a source of competitive advantage.

Moreover, despite the way the hotels target the market, it was found out that all of the hotels interviewed saw that setting low rates is bad for the image of the hotel as customers might associate the rates with bad service. Hence, setting rates according to competitors and hotels around the area.

It was found out as well that hotels rely on their staff as their source of competitive advantage, but, according to Barney (1991), as this source is imitable and not rare in the industry, then, not a source of sustainable competitive advantage. Moreover, staff being a source of competitive advantage in an industry that expects good service despite the amount of money that you are paying, thus, rather than service being a source

of competitive advantage is something that hotels must offer if they want to be competitive in the industry.

The only hotel of the ones interviewed, with a real source of competitive advantage, was the hotel with the largest chain, they were adopting a differentiator strategy by delivering a more technological approach towards service, to a market that values the freedom and 'do it yourself' service. Their technological approach, among the hotels interviewed, was found out to be valuable as it offers knowledge regarding the target market due to the data collection through their app and website, rare as the other hotels interviewed did not mention a similar approach, not imperfectly imitable as it can be duplicated, however, it would take time to make it in such a level, and low risk of substitution due the brand recognition. Hence, the technological approach this hotel is using, is a source of a sustainable competitive advantage in the city of Dublin. Moreover, the technological approach was implemented due to the data gathered through their app and website, hence, exploiting their internal strengths through a response to the market opportunities.

Furthermore, location was mentioned from the hotels as being their source of competitive advantage, which according to Barney (1991) , it can indeed help the firms to gain advantage, however, in this case, as the 4 hotels are located in the city centre of the city, it seems that location is not something rare in this scenario, hence, not a source of competitive advantage when you have this 4 hotels competing against each other.

Regarding the usage of big data analytics, is limited to the corporate level, and just with hotel chains. We can see from 'hotel 4' how big data analytics has helped them to segment the market in a more efficient way and provide what their guests are looking for, thus, a more effective differentiation strategy. This hotel as well , has more ways to collect data as is part of an global hotel chain, something the other hotels lack

due to their size, hence, it can be understandable that this hotel uses data to enhance the service provided.

The researcher believes that this research help to understand the current situation of the hotels and the lack of understanding regarding 'competitive advantage' hence, adopting a 'basic' strategy of the service industry, which is, of course, focusing on the service. Furthermore, this research helps to understand as well that the strategies proposed by Porter (1985), does not necessarily apply in the hotel industry, at least not 'low cost' strategy, as, according to the hotels interviewed, this gives the brand a bad reputation, as it gives the impression the service will be bad.

However, it seems unfair to compare these 4 hotels against each other as , even though the are part of the same population, the category of the hotels was not taken into consideration for this research. Hence, recommendations will be addressed on the next chapter.

Recommendations

The researcher believes that in order to have a better understanding of how big data analytics have or can work, further research in the hotel industry on a corporate level is needed, as according to the interviews done, that is where the big data analytics takes place.

Furthermore, in order to be able to generalise the strategies done by the hotels, a bigger sample is needed, as well as widening the scope of the research as the hotels interviewed were just from the city of Dublin.

And last but not least, it was found out that comparing hotels in general, despite their category, gives unfair results, hence, future research should focus on a specific category and sample on the basis of that hotel category.

Limitations

Some of the limitations encountered whilst doing this research was the lack of time in order to interview more hotels, as the research had a due date. Furthermore, because of the current ongoing situation with the Covid-19 , most of the hotels were closed or with little operations, hence, getting an interview was complicated as there was no answer from the hotels. That is why a convenience method for the interviews was selected.

Furthermore, due to the library of National College of Ireland was closed, books were limited to the ones online, unfortunately, the book needed for 'case studies' was the one of Robert K. Yin, which is the author most mentioned in the literature of case studies, however, is not available in the online library of NCI, just the physical book.

Moreover, after conducting the interviews, it was found out that big data analytics was being used on a corporate level instead of the business level, at least on the hotel chains, hence, the researcher was unable to understand how big data analytics has helped the companies.

And last but not least, it was not possible for the researcher to access balance sheet in order to understand if the current strategy is making the business profitable, or not, hence, unable to compare the different strategies used by the hotels.

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Appendix A : Participant Consent form

Technology as a source of competitive advantage :

An embedded case study

Consent form

I..... voluntarily agree to participate in this research study.

I understand that even if I agree to participate now, I can withdraw at any time or refuse to answer any question without any consequences of any kind.

I understand that I can withdraw permission to use data from my interview within two weeks after the interview, in which case the material will be deleted.

I have had the purpose and nature of the study explained to me in writing and I have had the opportunity to ask questions about the study.

I understand that participation involves being interviewed with subjects regarding the business I am in. From the hotel itself, business strategies, target market and competitive advantage.

I understand that I will not benefit directly from participating in this research.

I agree to my interview being audio-recorded.

I understand that all information I provide for this study will be treated confidentially.

I understand that in any report on the results of this research my identity will remain anonymous. This will be done by changing my name and disguising any details of my interview which may reveal my identity or the identity of people I speak about.

I understand that disguised extracts from my interview may be quoted in findings for the dissertation of the researcher .

I understand that if I inform the researcher that myself or someone else is at risk of harm they may have to report this to the relevant

authorities - they will discuss this with me first but may be required to report with or without my permission.

I understand that signed consent forms and original audio recordings will be stored securely. All information given will remain confidential and only the researcher will have access to the transcripts and audio records until the end of the current year (2020).

I understand that a transcript of my interview in which all identifying information has been removed will be retained for a period of 2 years.

I understand that under freedom of information legalisation I am entitled to access the information I have provided at any time while it is in storage as specified above.

I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

Luis Pineda ,MSc in International Business.

Mobile 083 ****3 60

Email. x18178026@student.ncirl.ie

Signature of research participant

Signature of participant

Date

Signature of researcher

I believe the participant is giving informed consent to participate in this study

Signature of researcher

Date

Appendix B: Interview transcript and coding

Q. How long have you been in the hotel industry?

A. Well, for me is about 7 years now, i worked in Italy for 3 years before i came to Ireland, so 4 years in Ireland in 'Hotel 1'

Q. Alright, that answers the next question which is how long have you been working in the hotel?

A. Look at that, so yeah, 4 years.

Q. Could you tell me a little bit more about the hotel you work in?

A. We are a boutique hotel focused on leisure and corporate travellers who are looking, probably for a more familiar environment in a hotel, because we offer better services, that what we strive for, actually, so we always aim to offer better home to home familiar environment to our guests. Starting from the warm welcome, all smiles, which no one can see now if we are going to wear masks haha, but we are going to apply some visors haha .

Q. So that answers as well the type of guests that you host, you said is mostly corporate and families, you said

A. Yes, I mean we are trying to move our target market to a different kind of traveller, now, with the Covid for example, now, they say, with statistics we receive from 'Fáilte Ireland', because with 'Fáilte Ireland', as you know, they are into this more than us, they told us to focus more on families, but, actually the data is kind of a controversy, most of online travel agents say is couples travelling now, I don't really rely on the data, because if you go on 'booking.com' for example, they don't ask you what's the reason why you are travelling, they ask you just if you are a corporate or a leisure traveller, so, basically if you book a double room, they say you are a couple, ok? but yes, now we are aiming more for families. We are trying our best, we have adjoining rooms, so we are trying to apply a package where we sell 2 rooms together, so people whenever they book, they go on our search engine, they would like to book for 4 adults, they will see this package and they can book a family package, two rooms basically.

Q. And would you say they are mostly nationals or foreigners?

A. As we work in the past, it was pretty much Irish and the UK. very few Americans, because we do not have as many facilities as the other hotels. But, now, domestic market, for the next 6 months I would say, very few from overseas.

Q. Regarding the target market, What do you think is it that they value the most?

A. You mean generally speaking, or now in this moment?

Q. Generally speaking...

A. Generally speaking, ok. So probably how close they are to the city centre and what they can do where they go. So if they come to Dublin, what can they do? they can go to temple bar, drink, have fun, or they come to the 'hotel 1' to go maybe to the theatre, or Stephens green, so let say, how close they are to the fun they can have in the city because if you book Dublin, and you are a corporate, so you don't care about whatever you have around you, but you just want to have a hometown feeling, or if you are a leisure traveller, then how close you are to such services to have fun, touristic places.

Q. What is it that the hotel do to attract that target market that you mentioned?

A. Ok, that's a nice question, well, there are plenty of things you can do for sure, you can incentivise returning customers for example, that's, the basic for every hotel, so they book through travel agents and then you decide to book them directly, or, you can create packages, if you know your market properly, and you know what you can offer to these guests, then you can create specific packages, offers, and also the availability of the staff to offer suggesting, maybe, yeah, that's a good one, if your staff lives here they can give suggestions, if you book someone directly for example, you have a signature message, like we have, if you want to know more about what to do in Dublin, ask our staff, but yeah, basically most of the hotels don't have this kind of feeling with the guests, being so close with the guests, they would just stay with the website to put up some offers, accelerators or scan paying, pay per click campaigns, so if they google something on the search engine for example, 'Dublin accommodation close to the city centre', they you put this meta data into the search engine whenever they google, you appear on the search yourself, so you

have to be very careful and what meta data you want to use on your website. And that is a strategy which is not very easy to use. you have to be very specific, you cannot put a bunch of words, they need to be strictly to what you want to target.

Q. Would you say that your hotel is adopting a better strategy than other hotels to attract the target market?

A. Well, we try our best but it's hard to say, because I don't have the data from the other hotels, just what they make public. So if you go into their websites you know what they are doing at the moment, that is all the data you can retrieve now. So yeah, I would say that, seeing the circumstances, we are a boutique hotel, we are in a nice area, we are slightly performing better than other hotels the same category. Not the the big hotels, they do for sure a better job than us.

Q. What do you consider more important, offering low rates or a good service? why?

A. So low rates was a strategy used in the past in the 'hotel 1' we had really cheap rates, like 60 euros in 2016, or even cheaper sometimes...it didn't work out so we decide to, that if you put your rates low, your brand will suffer from it, people will think about your brand as a cheap brand, who cannot offer services, so we are trying to keep our rates up, compared to the others, maintain our rates compared to the other few, very few competitors, kind of the same, maybe a little bit lower, but not that much lower, so I would say services, and probably, the brand, so yes, rates help.

Q. How do you set you rates?

A. So rates are based on what are the actual competitors doing, we receive a report from '[booking.com](https://www.booking.com)' which is called 'Rate Intelligence', and from there you can see, you have a competitor set which you can set...you select the properties and you receive a report every day, basically that's how you do it, you check what the reports says and then you, as we did say before, we have to check what you want to do, if you want to lower rates and lose your brand image, so, we try to keep it up. With '[booking.com](https://www.booking.com)' rate intelligence if you have a score of 5 or lower, it is nice to have, if it

is more than 5, it means you are selling too expensive, or rather, to low, it depends by the actual rates.

Q. So booking kind of tells you if your selling either expensive or cheap..

A. Yes, it tells you how your performance will be based on that rates. so if it's 0 to 5, is great.

Q. And now, regarding the service, how do you train you staff?

A. Well, i've been a front office manager, I have been supervisor, I have been a receptionist and a night porter, so , I think our team can develop the skills by themselves whenever they face kind of ... not difficulties, a challenge during the job, but, pro activeness is a nice thing to have, if you have a good management, but is not easy to predict what is going to come next, specially with unexpected things that can happen, specially during St. Patricks for example or this kind of stuff, but yes, pro activeness is the best thing, and you have S.O.P folders (Standard operation procedures) with all the procedures that they can go back and check whenever they need that or if you are present on the job, thats the best thing because you can show how things are done, so they will remember that, and if they are guided through the process, its even better, they don't need to be left alone.

Q.What makes your hotel different from the others?

A. The staff.

Q. Do you think being different helps to attract more customers?

A. I think the guests wont know the difference before they stay, i think they will notice that whenever they start staying with us, from the first stay they will that see we are different in a certain way from the others and then we take it from there. Otherwise they wouldn't notice before, we have nice images on the website , nice boardings maybe, but that doesn't make the 'hotel 1' . 'hotel 1' is the people that works in there. in my opinion.

Q. So now, i want to talk a bit about BDA, first of all, are you familiarised with the term 'Big data analytics'?

A. I am not very familiar with that but i presume i about data you can extract from any provider such as 'booking.com' with the rate intelligence, if that can be considered big data.. so yes, i work on that and also 'Expedia', 'Expedia' has a nice extranet where you

have a lot of functionalities and also 'Fáilte Ireland', on a monthly basis send a questionnaire to all the hotels to know about how's the occupancy like, and you will receive a report eventually at the end of the year, so it is not really helpful in that way, but still, it gives you a general idea of what you can do next year.

Q. So you could say that your hotel uses BDA indirectly, because it is through 'Booking', 'Expedia', 'Fáilte Ireland'

A. Yes, I mean we do not have our own big data, we have just the data guests offer us

Q. Do you think it could help the hotel -BDA- if you had your own BDA

A. Sure, it would be helpful to know, everything is helpful, so if I knew how to retrieve this information then I would make sure to implement it in our business. Would be great to know.

Q. What do you think of the current situation of the hotel industry in Dublin Pre Covid19?

A. Well, it is going very well, I have to say, we had few dates which we are fully booked already, so you could tell maybe is American travellers, but we do not have that many of them, so you could say thanks to the events, that are already scheduled for this and the next years, we are doing very well, also the others around us,

Q. so of all of the events are helping the business in general.

A. Yes, specially us because of our location, is closed to the Aviva, RDS.

Red = Target market

Green = Source of competitive advantage

Blue = Big data analytics

Yellow = Low cost strategy

Orange = Differentiator

Purple = Service

Grey = Perceived value from target market

Magenta = Hotel industry situation